PAPERS READ.

A THYLACINE OF THE EARLIER NOTOTHERIAN PERIOD IN QUEENSLAND.

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We have it on the authority of the late Sir R. Owen, confirmed by Mr. Lydekker, that the smaller of the examples of Thylacine jaws from the Wellington Caves which have reached the hands of those authors "cannot be distinguished from large male individuals of *Thylacinus cynocephalus*," the existing species.* To that species they are referred by Owen, while Lydekker regards them provisionally as belonging to the weaker sex of Owen's *T. spelæus*. Of *T. spelæus* itself all we know is derived from the improved figure of the type specimen given by Owen on Plate v. fig. 9, of his 'Extinct Mammals of Australia,' and from his account of that and other examples of the species in the text of the same work (p. 106), where he says—"In *Thylacinus major (= spelæus)* the upper canine is proportionately longer in comparison with the lower than it is in *Thylacinus cynocephalus:* the other osseous and dental characters, so far as they are at present represented by fossils, indicate chiefly a superiority of size as compared with the still existing Tasmanian species." We are then at liberty to assume that apart from relative size there are no salient differences between these two species other than a larger upper canine in the Cave Thylacine, and are consequently free to record the occurrence of a *Thylacinus* also larger than the living species but differing from it in so many expressive features as almost to exclude the possibility of its identification with a species so closely resembling the latter as *T. spelæus*. Remains of a Thylacine have for some years been present in the Queensland Collection, where they have been left unlabelled because they excited a strong suspicion that they differed too much from the living

* Catalogue of Fossil Mammals in the British Museum, Pt. v. p. 264.

species to belong to *T. spelæus;* that suspicion is now an assurance. Sufficient proof of the fact has within the last few days been furnished by the discovery of the major part of the left side of a skull containing the whole of the teeth except the second upper premolar, and accompanied by the first four cervical vertebræ, the condition of the teeth showing that they were derived from an aged individual. For these interesting fossils, which were brought to light at Ellangowan, near Cambooya, on the Darling Downs, the Collection is indebted to the quick perception of their novelty and value shown by their exhumer, Mr. A. B. Briggs, of that ilk.

Cranium: Comparing the cranium with that of a male of the "Tasmanian Tiger" so called, the more striking of the differences existing between them may be set down as follows:—The total length of the skull is 239 mm., against 231 mm. in *T. cynocephalus*, that is, it is $\frac{1}{29}$ greater; the total length of the dental series is 130 mm., against 120 mm., or $\frac{1}{12}$ greater; but the total length of the premolars and molars together is only 92 mm., against 88 mm., or $\frac{1}{22}$ greater, indicating a distinctly longer muzzle; the second and third incisors are separated by interspaces from the first and fourth, which last has no rudimentary lateral lobes marked off by shallow vertical impressions on its anterior surface; the canine is more compressed, especially on the posterior side of the basal half of the crown, where it presents an edge which, in consequence of a sudden attenuation of the distal half of the tooth, slopes downwards and forwards much more rapidly than does the rounded surface of the recent tooth; the space between the first and third premolars is relatively much longer, being 25 mm., against 18·5 mm., or more than $\frac{1}{3}$ greater; the posterior cusp of p^3 is less distinct and is in contact with m^1; m^1 is longer in proportion to m^2m^3, the ratios being, in the fossil, 12 : 28, in the recent teeth, 11 : 29; m^3 is broader in proportion to its length and shorter in proportion to the size of the cranium, the ratios of breadth to length being, in the fossil, 12·5 : 15, in the recent tooth, 12 : 15, and the posterior side of its inner cusp is joined to the blade by a compressed ridge; m^4 is the most

remarkable of the true molars and might easily be mistaken for the last molar of a large *Sarcophilus :* is is similar in shape, with diameters as 9 : 5, entirely without inner or posterior cusps, and shorter than the remainder of the tooth in the living species ; the premaxillary, measured at the anterior edge of the alveolus of the canine, is 4 mm. or $\frac{2}{7}$ broader than in *T. cynocephalus ;* the length of the premaxillary from the anterior end of the nasal is 44·5 mm., against 40·5 mm. In the posterior region of the skull the occipital condyle is relatively large, 25 mm., against 20·5 mm. in length, or nearly $\frac{1}{4}$ longer ; the paroccipital process is strong and directed downwards and backwards at an open angle, instead of being nearly perpendicular; the supraoccipital and exoccipital crests are continuous, with but a slight emargination over their junction ; the zygomatic process of the squamosal has its posterior surface inclining backwards instead of forwards, and consequently closing up to a great extent the space between it and the exoccipital crest.

Mandible : The total length of the mandible is 193·5 mm. against 191·5 mm., the two species thus approaching much more nearly to equality in this measurement than in the length of the cranium ; its depth below the first premolar is 24 mm. against 18 mm., the animal had therefore a much deeper chin ; the total length of the dental series is 118·5 mm. against 116·5 ; the total length of the premolar and molar series is 99 mm., or practically the same as in the recent jaw, in which it measures 98·5 mm. ; the length of the last molar is 17·3 mm. against 16·6 mm. ; from the hinder surface of the last molar to the origin of the revolute inferior edge of the outer crotophyte fossa the length is 43·3 mm. against 51 mm. ; the least width of the hinder surface of the condylar process is 11 mm. against 14·5 mm. ; the anterior orifice of the dental canal is almost wholly in advance of the second premolar instead of beneath the posterior half of that tooth ; the coronoid process rises at a higher angle ; the third incisor is separated by an interspace from the canine ; this latter is scarcely smaller than the canine of the upper jaw and is less curved than in the recent species ; the first and second premolars are separated by a longer interspace.

In the atlas the vascular foramen beneath the root of the diapophysis is reduced to a minute orifice, but apart from greater size this vertebra presents no noteworthy difference from that of *T. cynocephalus*.

The axis has its postzygopophysial facette directed outwards to an obviously less extent, and its neural arch is longer in proportion to the length of the centrum, which has a length of 56 mm. against 54 mm. and a breadth exactly proportionate to that of the living species.

The total length of the skull and vertebræ present compared with those of the existing species is as 357 to 330, or about $\frac{1}{12}$ greater, as in the upper series of teeth. Taking this fraction as a constant, the bulk of the individual represented by the remains under view may be estimated at about a fourth greater than that of the modern species. From measurements given above it may be further inferred that it had a relatively short head, terminating anteriorly in a longer and considerably deeper snout.

Its variance from the Tasmanian Thylacine is writ large on most of its features, and consequently it can have little of specific moment in common with *T. spelæus*. If perchance it should eventually appear that the differences now pointed out are in reality exhibited by examples of *T. spelæus*, still, as they have not been published so far, that species has not been so described as to be recognisable, and its name should lapse in favour of the one now proposed, *Thylacinus rostralis*.

The cranial remains previously collected and now claiming to belong to the present species are these :—A portion of an aged right maxilla (Cat. No. 12,027) with p^2 in place and the sockets of p^3 and m^1. The length of the tooth and sockets combined is 47·5 mm. against 38 mm. in *T. cynocephalus*. This maxilla shows that the type does not exemplify the full size attained by the species, since in it the corresponding length is but 44 mm. The palatal surface is transversely concave (Pilton). The dentary process of a left maxilla (Cat. No. 12,028) with all the molars and part of the last premolar. The length of the molar series is 53 mm., in the type 59 mm., in the recent species 59·5 mm.

exclusive of the posterior cusp of m^4 ; in this example m^4 has a very small inner cusp ; the length of m^3 is 12·7, its breadth 10·5. This specimen appears to have been derived from a small and aged female (Gowrie Creek). A fragment (Cat. No. 12,031) of a left maxilla with the third premolar (Chinchilla). Anterior portion of a right mandibular ramus (Cat. No. 12,029) with m^1 and fangs of the premolars and canine. The length of the premolar series is 57·5 mm., in the type 56·5 mm., in the living species 54·5 mm. ; depth of mandible below the first premolar 28 mm. Anterior orifice of dental canal beneath anterior half of p^2. Length of symphysis 53 mm. against 57·5 in the type specimen and 52·5 in *T. cynocephalus* (Chinchilla). A portion of a left mandibular ramus with p^1, p^2, and part of p^3 (Cat. No. 12,030). Length of p^1p^2 21·5 mm., as in the recent species, the interspace being less than in the type, in which the two teeth occupy a space of 30·5 mm. Dental orifice beneath the middle of p^2 (Gowrie Creek).